

FIG. 1A

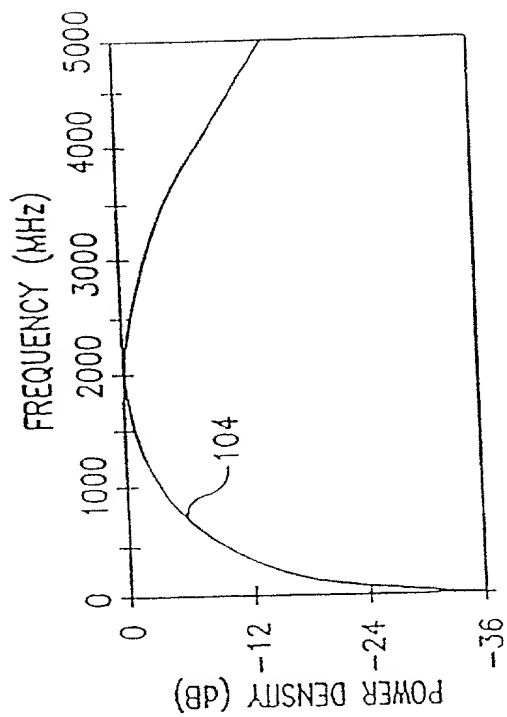


FIG. 1B

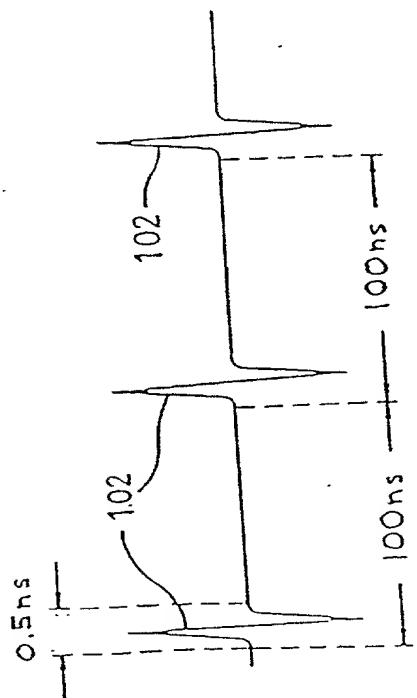


FIG. 2A

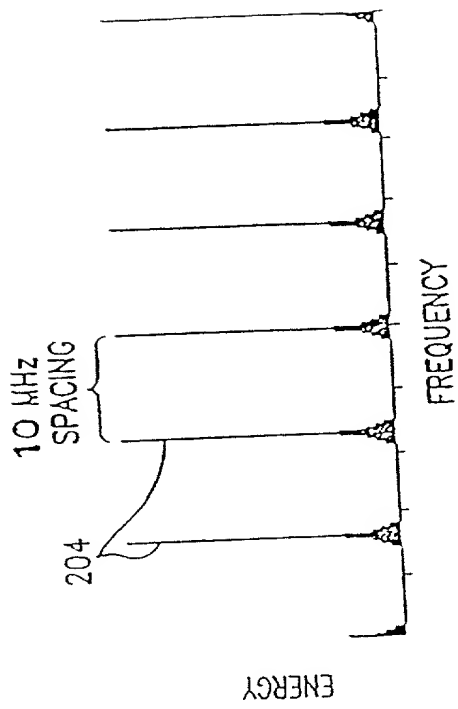


FIG. 2B

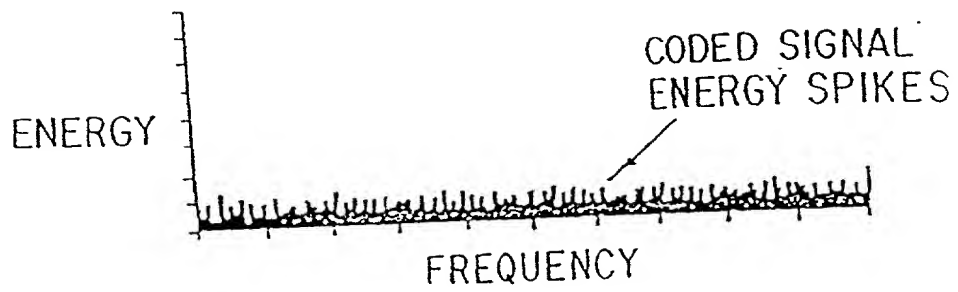


FIG. 3

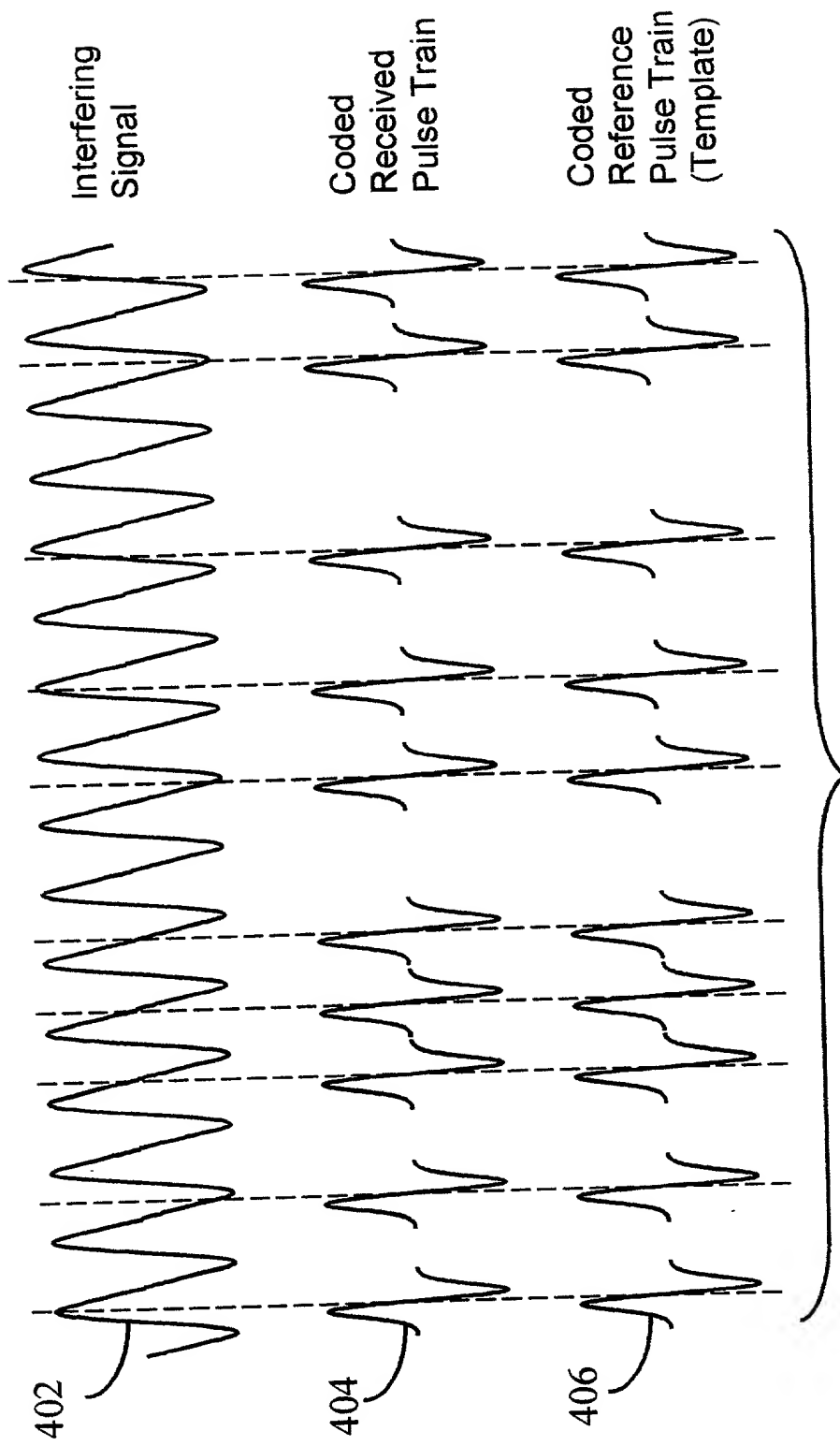
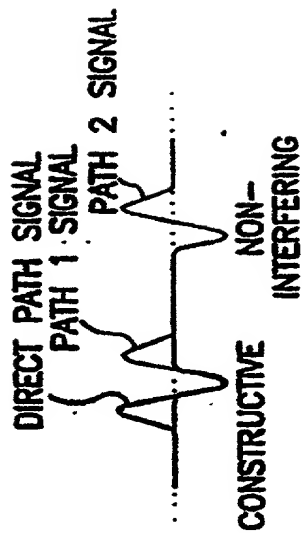
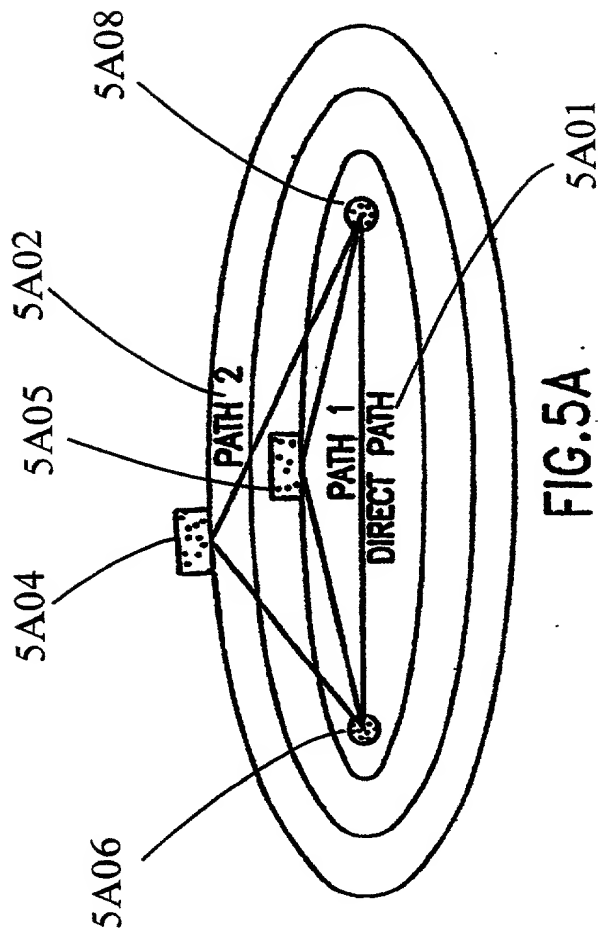
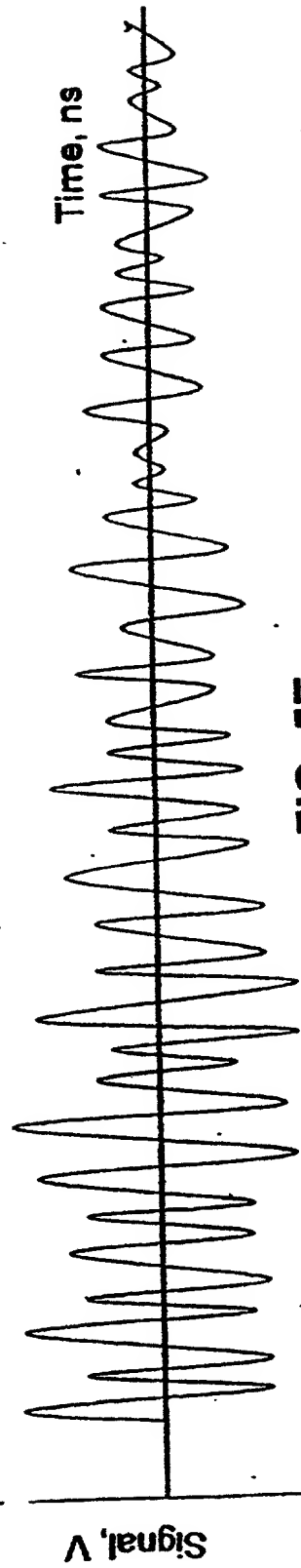
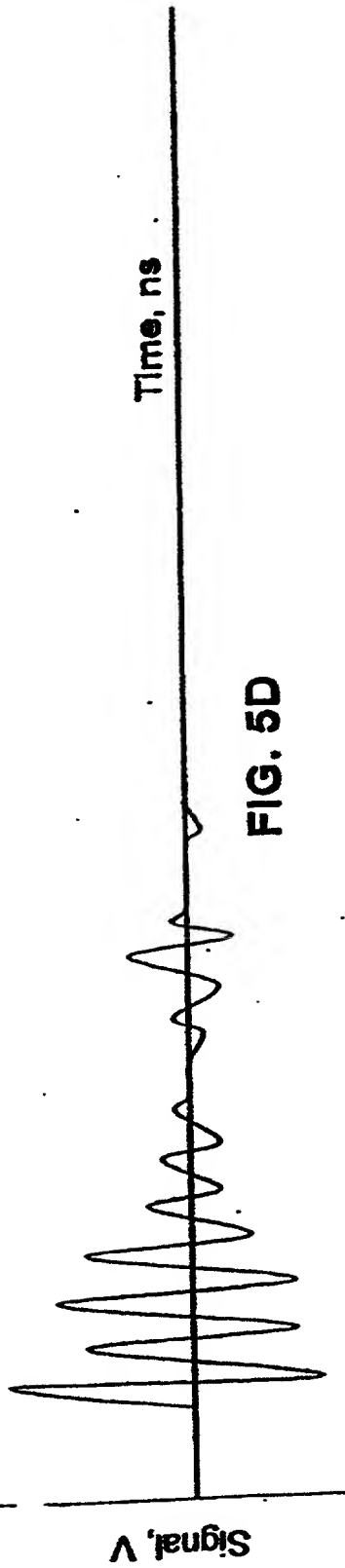
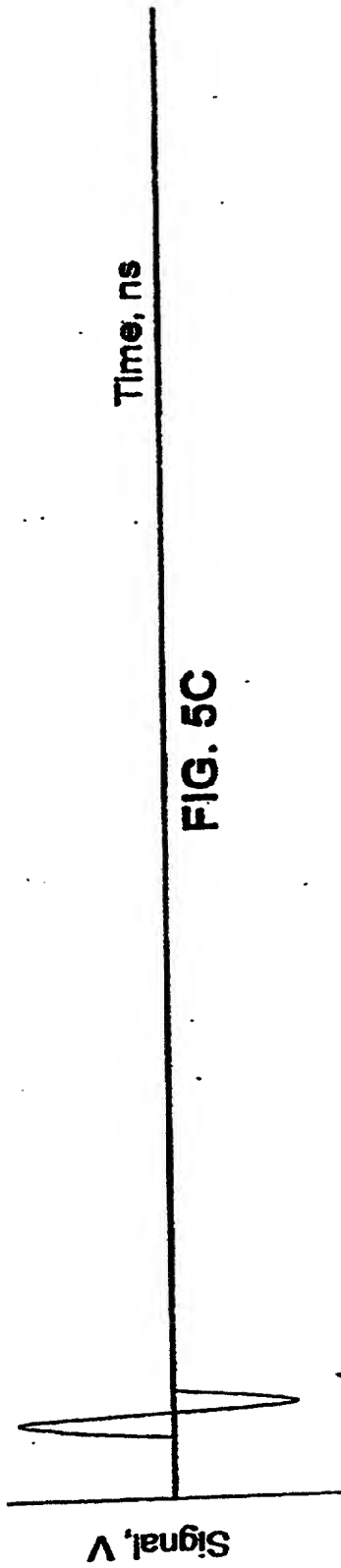


FIG. 4





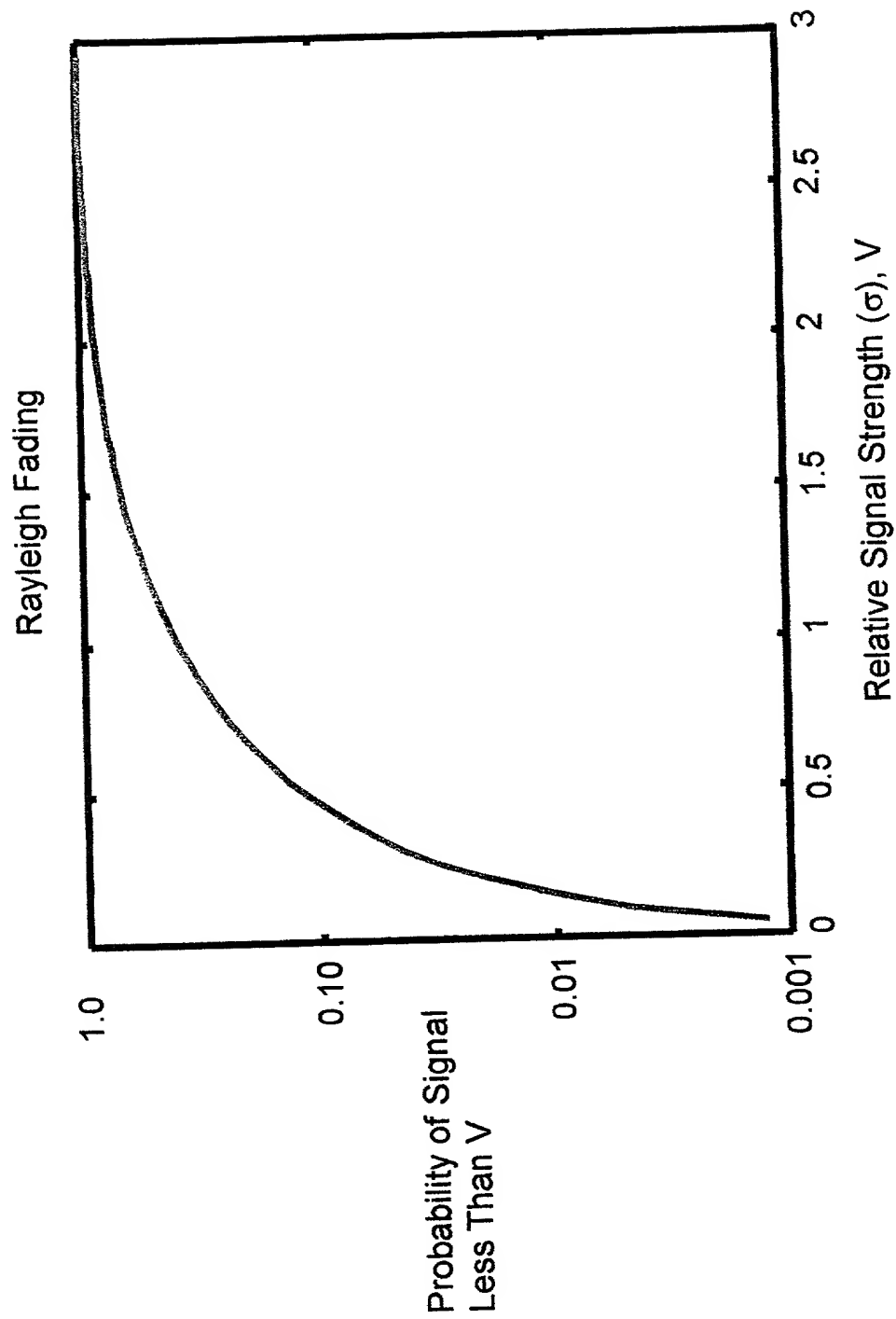


Fig. 5F

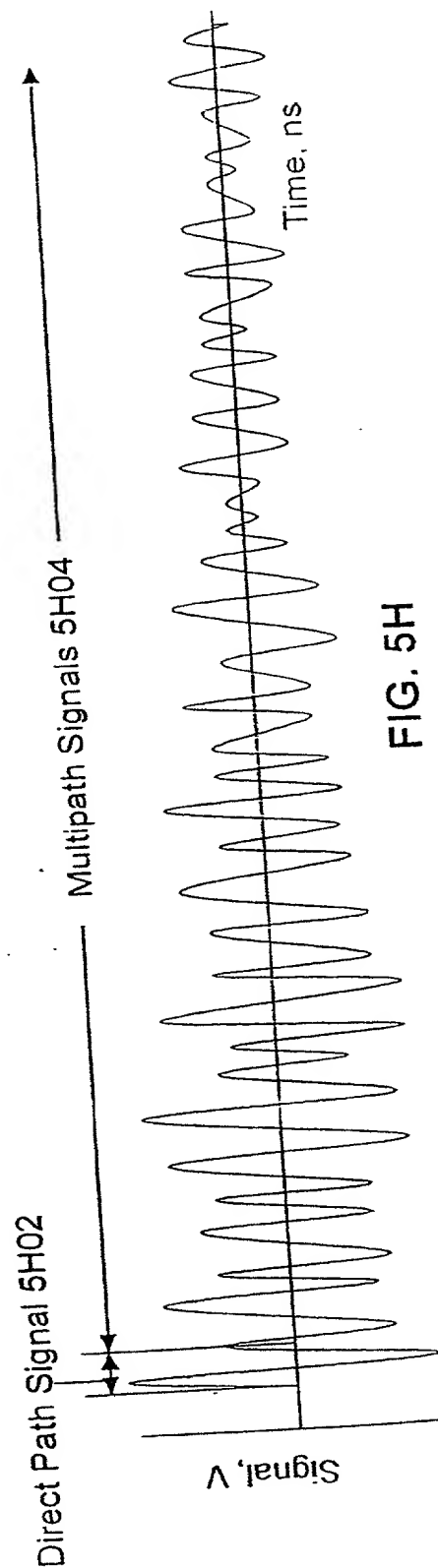
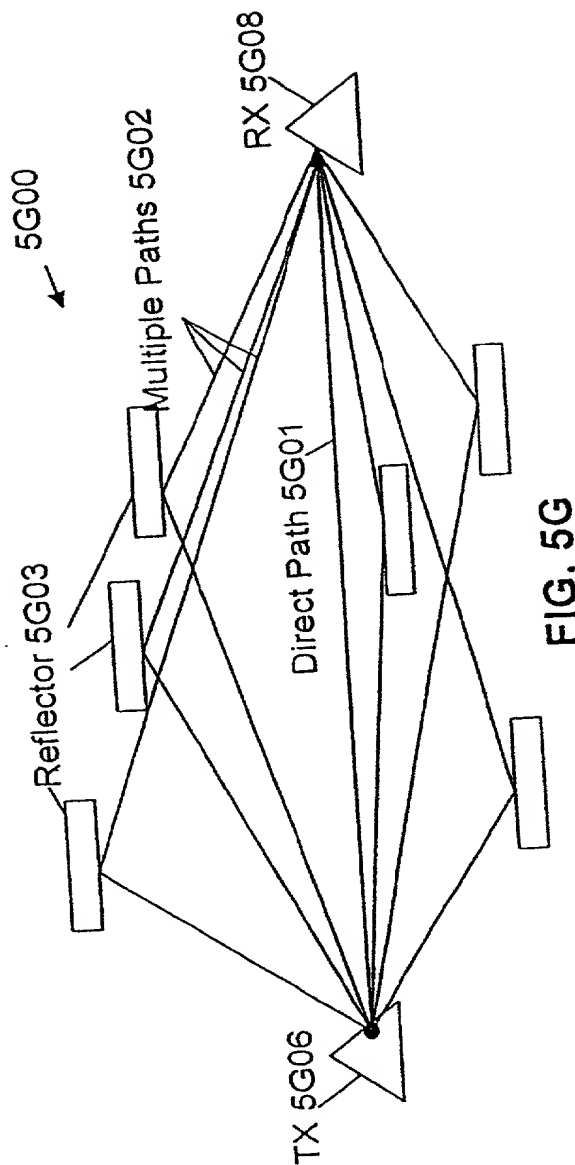


FIG. 5H



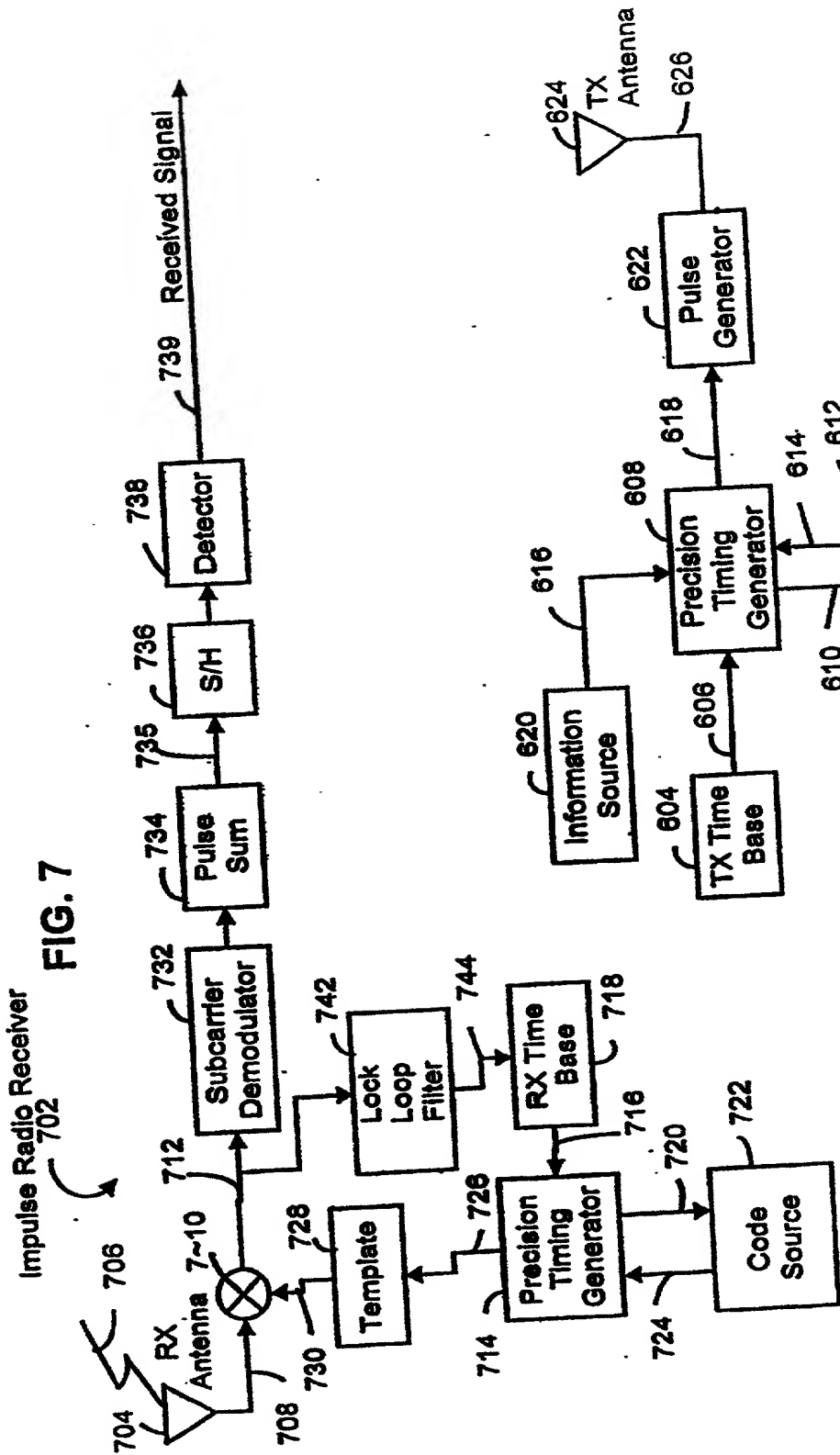


FIG. 7

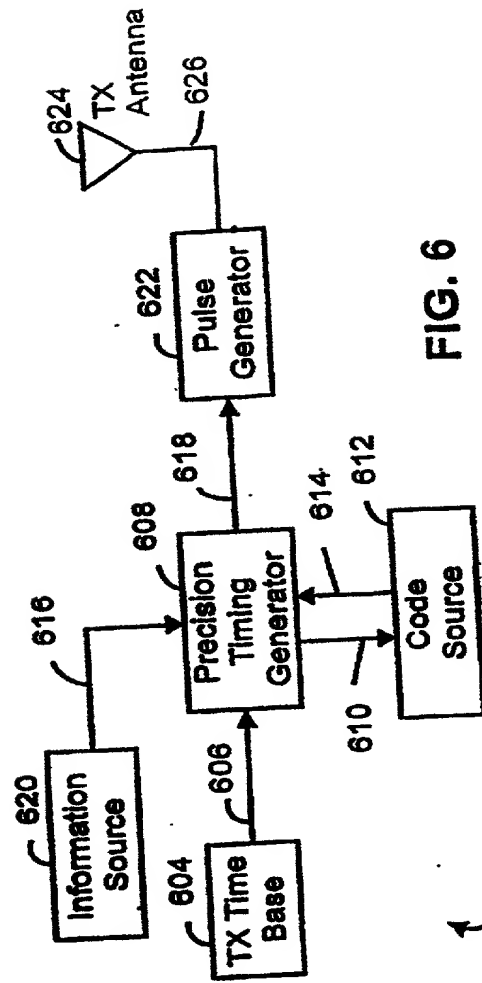


FIG. 6

Impulse Radio Transmitter

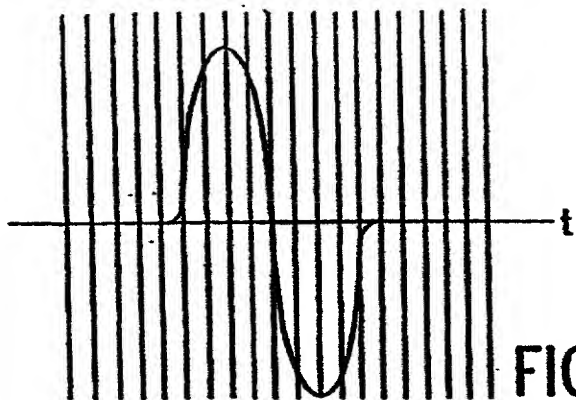


FIG. 8A

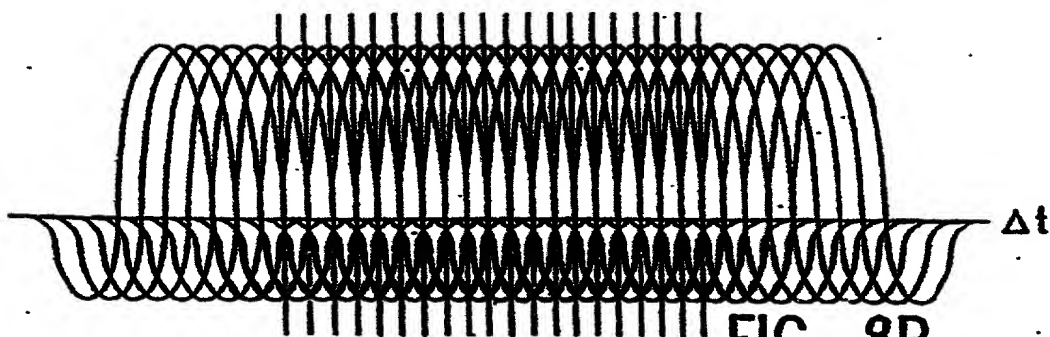
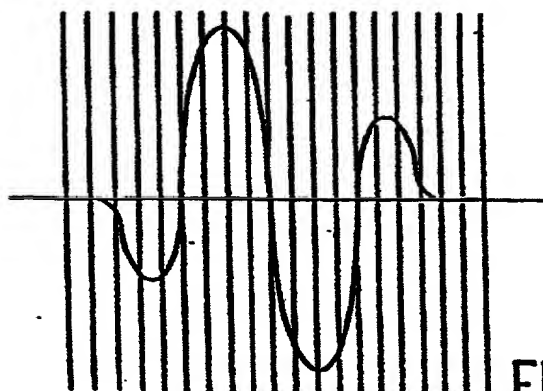


FIG. 8B



CORRESPONDING  
TO EACH  
 $\Delta t$

FIG. 8C



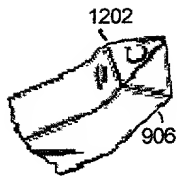


FIG. 12

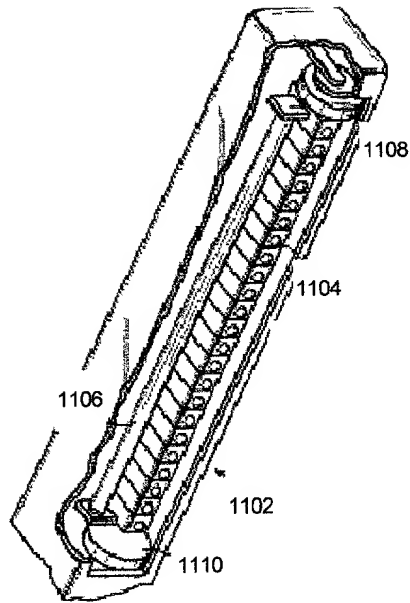


FIG. 11

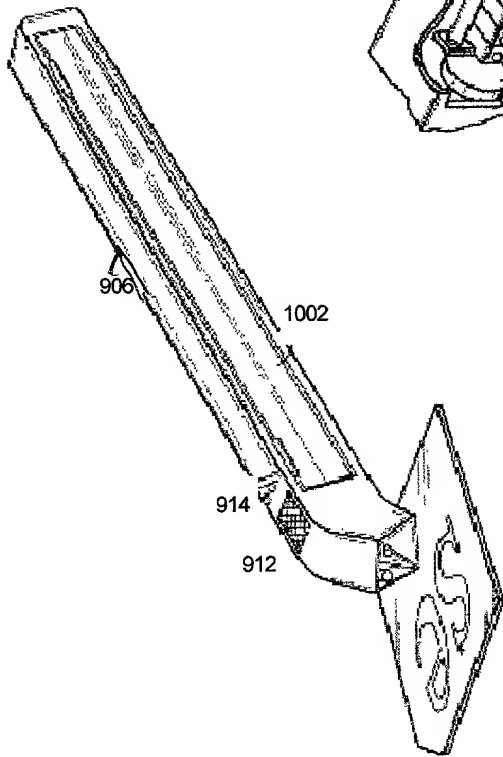


FIG. 10

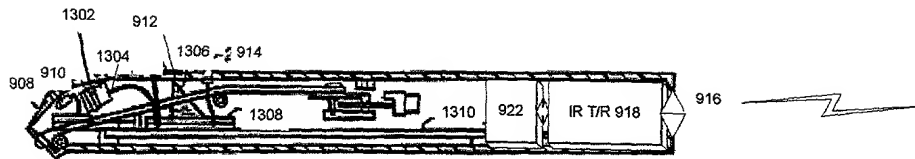


FIG. 13

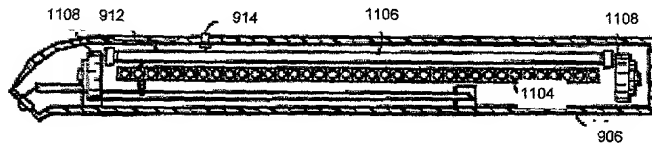


FIG. 14

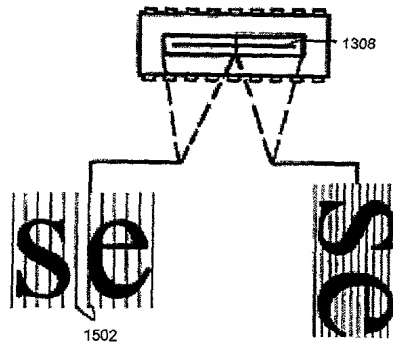


FIG. 15

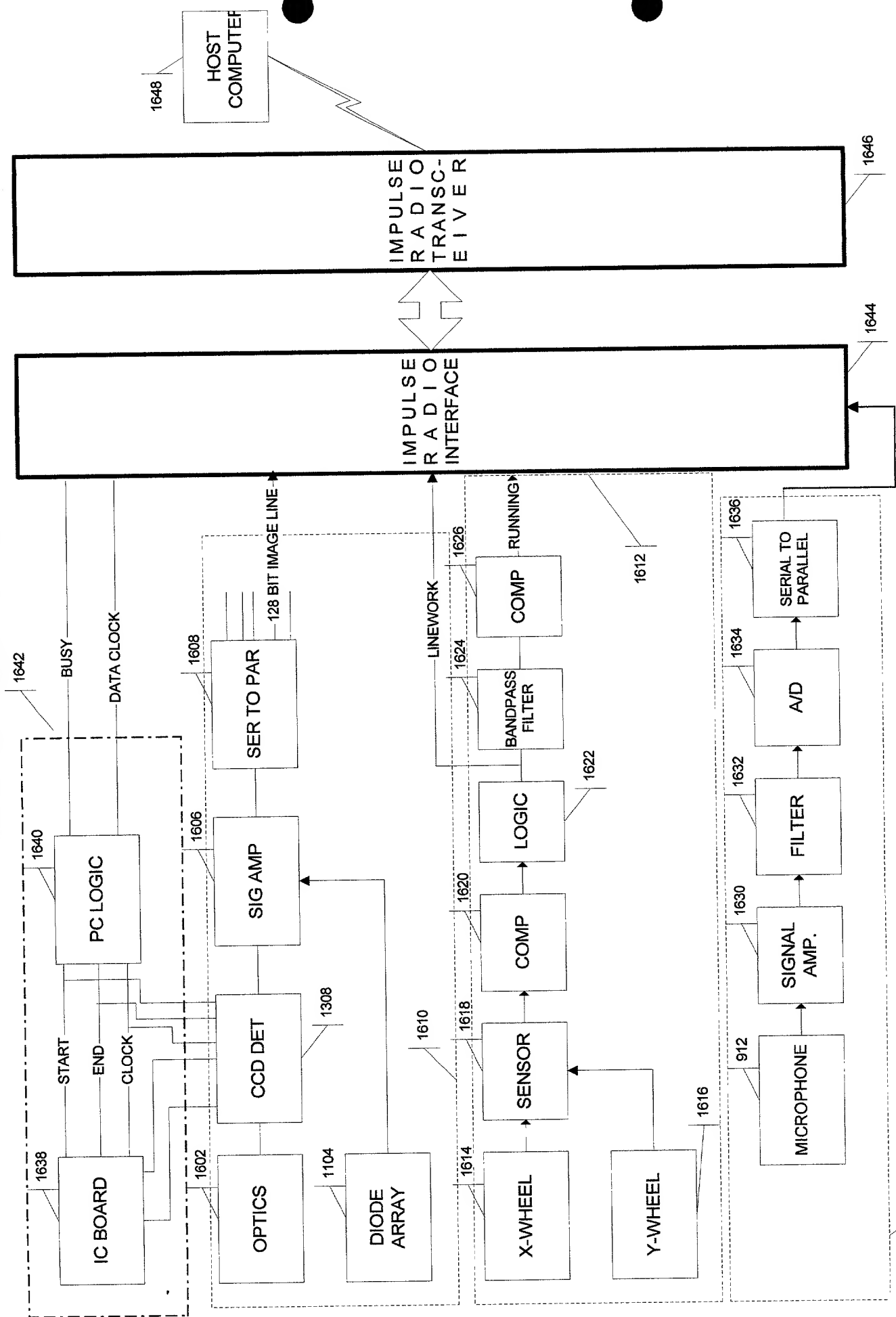


FIG. 16

FIG. 17 is a block diagram of a system for processing detector signals. The system includes a detector array (1308) which outputs a detector signal and a noise cancel signal. The detector signal is amplified by a gain of 1/454 (1710) and then passes through a low pass filter (1712) with a cutoff frequency  $F_{CO} = 7\text{ Hz}$ . The noise cancel signal is amplified by a gain of 1/1.1 (1712). The amplified signals are then converted to digital by an A/D converter (1714). The digital signals are then processed by a detector array control (1716) which outputs 3 bits of data. The system also includes a frame sequencer (1704) which outputs 100K samples/sec. The frame sequencer is clocked by a sample timer (1702) with a frequency  $F_0 = 1\text{ MHz}$ . The frame sequencer also outputs a done signal to a sample counter (1706) which outputs 6B samples/frame and 941 frames/sec. The sample counter is reset by a frame timer (1700) with a frequency  $F_0 = 941\text{ Hz}$ . The system also includes a tachometer sensor (1618) which outputs a tachometer signal to a tachometer sensor (1614) which outputs a tachometer signal to a synchronizer (1708). The synchronizer outputs a frame ready signal (10) to the detector array control (1716).

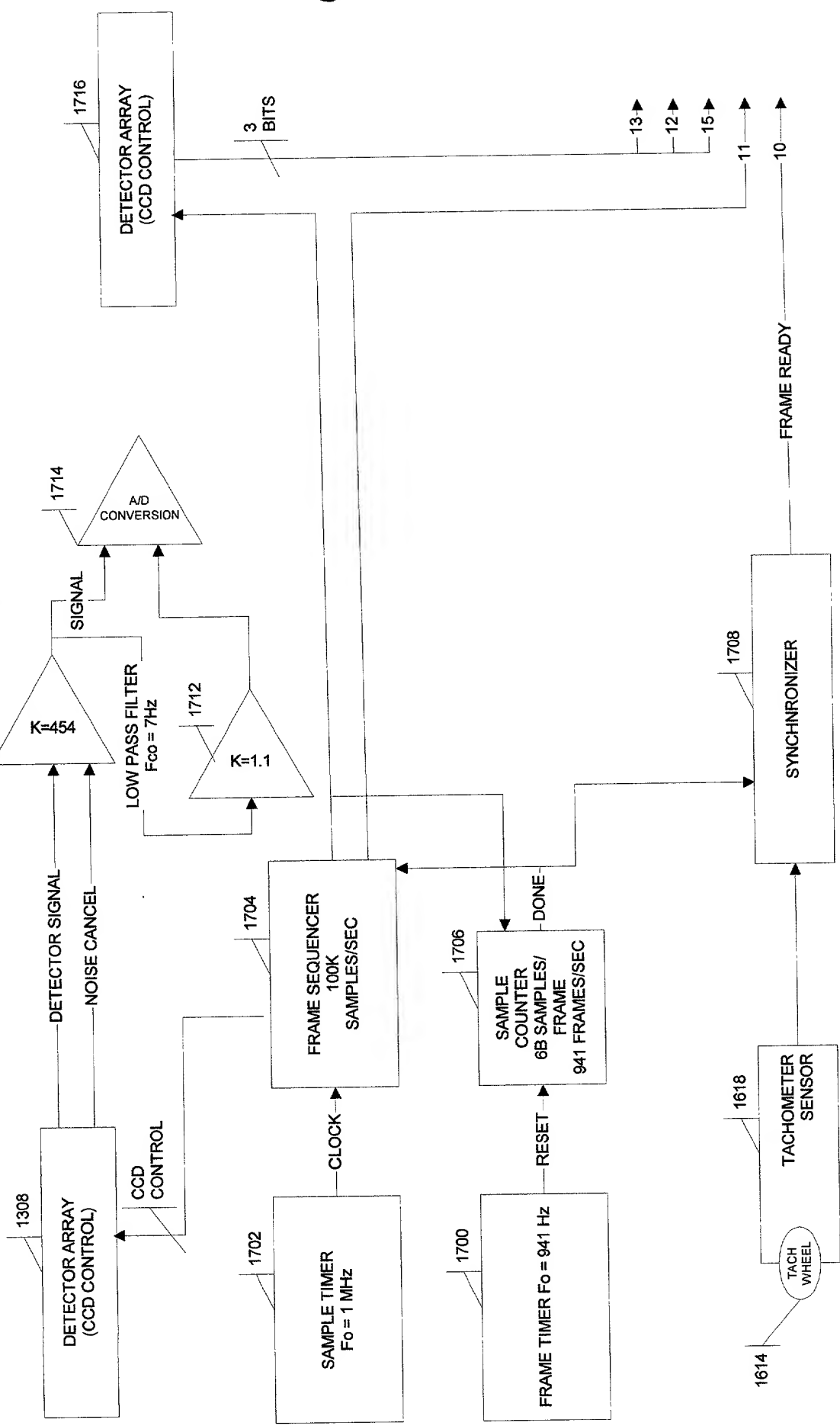


FIG. 17

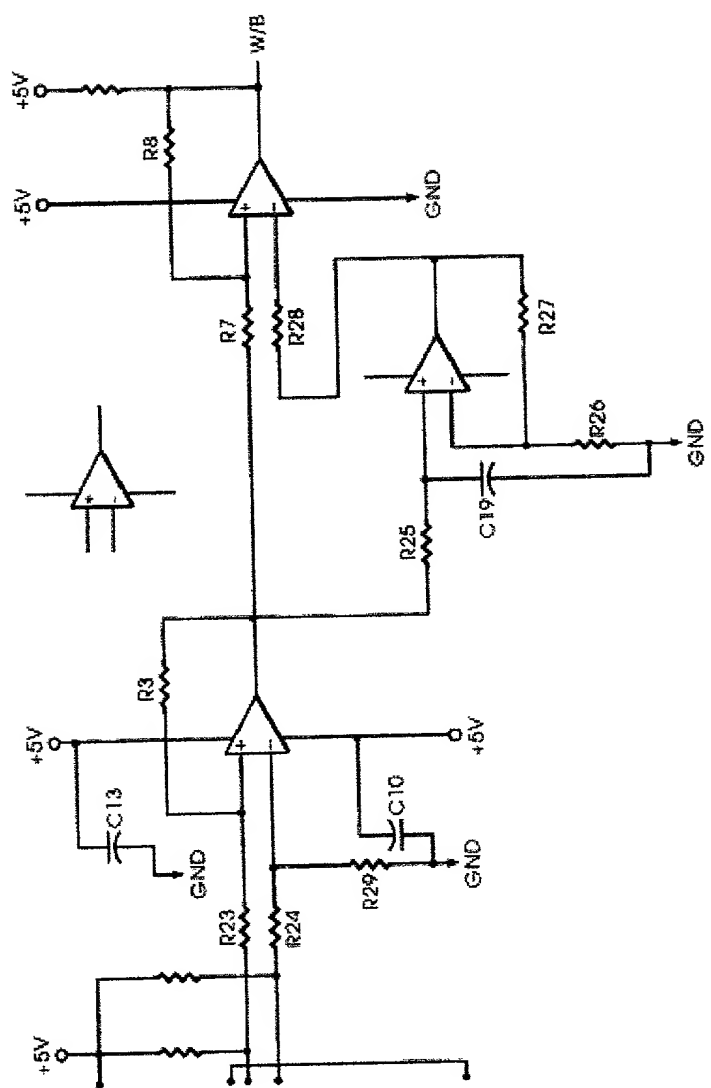


FIG. 18



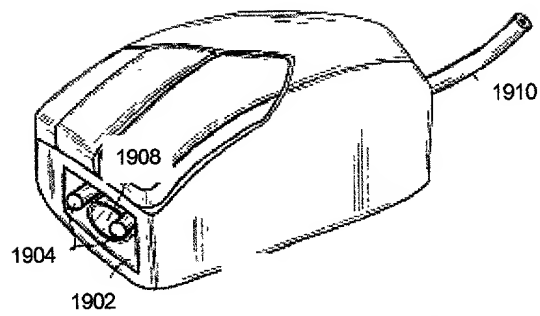


FIG. 19

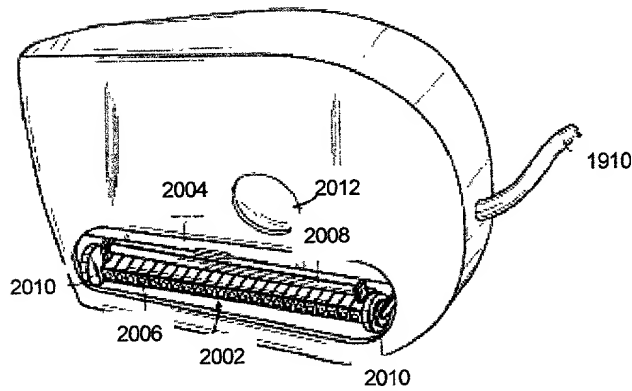


FIG. 20

